Chekuri 2-4-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s): Chandra S. Chekuri et al.
Case: 2-4-4
Serial No.: 09/628,378
Filing Date: July 31, 2000
Group: 2662
Examiner: Donald L. Mills

Title: Methods and Apparatus for Design, Adjustment or Operation of Wireless Networks Using Pre-Frequency Assignment Optimization

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Reply Brief is submitted in response to the Examiner's Answer dated January 11, 2005 in the above-referenced application.

ARGUMENT

Applicants initially note that the Examiner has withdrawn the §103(a) rejection of dependent claim 7, corresponding to Issue 4 in the Appeal Brief filed by Applicants on September 9, 2004. Accordingly, this issue no longer exists, as acknowledged by the Examiner on page 11 of the Answer.

On pages 8-11 of the Answer, the Examiner addresses the §102(b) rejection of claims 1-4, 8, 9 and 23-25 over U.S. Patent No. 5,561,841 (hereinafter "Markus"), corresponding to Issue 1 in the Appeal Brief.

With regard to independent claims 1 and 23-25, the Examiner argues that the "assignment of frequencies to one or more communication channels" as claimed corresponds to "distributing designated frequencies to communication channels during system turn-up." See the Answer at page 8, first paragraph. It therefore follows, according to the Examiner, that one or more of the optimizations described in Markus constitute a "pre-frequency-assignment" optimization as claimed. Applicants respectfully disagree. Markus clearly teaches that frequencies are assigned prior to the described optimizations, and does not disclose alteration of this assignment responsive to the optimizations. Markus generally refers to the frequency assignment as "the frequency scheme of the network," as noted in column 8, lines 12-13, and appears to effectively treat this frequency assignment as a constant that is not subject to variation. For example, Markus in column 8, lines 14-37, states as follows, with emphasis supplied:

The above-mentioned frequency scheme of the network to be simulated forms a basis for the interference measurements performed by the block 302. The frequency scheme is employed to identify possible interfering base stations and other similar location-specific field strength values obtained from the field strength matrix of the area pixel. The local signal quality can be estimated by means of a carrier/interference (C/I) analysis performed in each area pixel. A corresponding bit error ratio value BER and a signal quality classification can also be determined on the basis of the C/I analysis. This can be done by comparing the carrier of a specific channel, with the carrier of an adjacent channel or with the signals of other base stations utilizing the same channel in the same network. The interference determination is performed by means of base station-specific field strengths calculated in the area pixels of the digital map by checking the ratio between each base station pair in each area pixel. Interfering base stations are determined on the basis of the frequency scheme, taking into account, e.g., all base stations utilizing the same frequencies as the base station dominating in this particular area pixel. To minimize unnecessary calculation, a threshold value can be determined, on the basis of which only the strongest interfering base stations are taken into account.

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Thus, the interference measurements generated in block 302 of FIG. 3 in Markus, which are inputs to the simulations 10 in FIG. 1 of Markus, are based upon a particular frequency assignment, referred to in Markus as the frequency scheme of the network.

There is no teaching or suggestion in Markus to the effect that the frequency scheme of the network is altered as a result of the particular optimization processes described therein. For example, the Examiner argues that "optimizing cell areas and channel handovers" as described in column 11, lines 29-35, of Markus constitutes a pre-frequency-assignment optimization as claimed, because it may occur prior to "system turn-up." However, Markus does not disclose that the frequency scheme of the network is altered subsequent to such adjustments. To the contrary, the adjustments require interference measurements, which in turn require a frequency assignment, that is, the frequency scheme of the network.

Accordingly, Applicants respectfully submit that Markus fails to teach or suggest a pre-frequency-assignment optimization as claimed, and in fact teaches away from the claimed invention in that the optimizations described therein seem to require a particular frequency assignment.

The Examiner at page 9, last paragraph, to page 10, first paragraph, argues that "coverage planning" constitutes a pre-frequency-assignment optimization, and that Applicants have admitted such in their Appeal Brief. Applicants respectfully disagree. Markus does not describe any coverage planning optimization which occurs prior to frequency assignment. Instead, Markus at column 5, lines 64-67, simply indicates that it is an object to achieve "optimal locations and parameters for the base stations," while also stating at column 1, lines 31-39, that the base station parameters are optimized as part of a parameter planning optimization. This parameter planning optimization uses the frequency scheme of the network, as described above, and thus occurs subsequent to frequency assignment. The determination of optimal parameters for the base stations, referred to at column 5, lines 64-67, thus occurs after frequency assignment.

With regard to dependent claims 2 and 3, Applicants again note that Markus discloses optimizations which apparently rely on the frequency scheme of the network. Thus, there appears to be no frequency assignment stage disclosed therein which follows a pre-frequency-assignment optimization stage, nor is there iteration of such stages.

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For the reasons identified above and in the previously-filed Appeal Brief, Applicants respectfully submit that the §102(b) and §103(a) rejections are improper and should be withdrawn.

Respectfully submitted,

Date: March 11, 2005

Joseph B. Ryan
Attorney for Applicant(s)
Reg. No. 37,922
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-7517

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I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-145Q.

Signature: _____ Date: March 11, 2005

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TRANSMITTAL OF REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is the following document relating to the above-identified patent application:

(1) Reply Brief.

It is believed that there is no additional fee due in conjunction with the response. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Ryan, Mason & Lewis, LLP Deposit Account No. 50-0762** as required to correct the error. Duplicate copies of the Reply Brief are enclosed.

Respectfully submitted,

Date: March 11, 2005

Joseph B. Ryan
Reg. No. 37,922
Attorney for Applicant(s)
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-7517